CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/KRIDL/W.No.13/BM/Gradation/2017-18 12.04.2018

TEST REPORT ON GRADATION OF BITUMINOUS MACADAM MIX

* Customer	:	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
* Agency	:	**Technical Manager (West),** KRIDL, Bangalore.
* Name of work	:	Improvements of asphalting at Ashwathkatte surrounding area in Mallasandra Ward No.13, Shettyhalli Sub Division, BBMP, Bangalore.
* Reference	:	BBMP/EE/DD/WO/220/2017-18 Dated: 07.02.2018
* Sample ID	:	Roads around Ashwathkatte area in Mallasandra, Ward No.13
Technical Reference	:	IS:2386 and IRC:SP:11-1984
Date of Testing	:	12.04.2018

GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-04 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
26.5	0	0	0	100	100
19	35.26	7.32	7.32	92.68	90-100
13.2	81.23	16.85	24.17	75.83	56-88
4.75	256.4	53.20	77.36	22.64	16-36
2.36	52.32	10.85	88.22	11.78	4-19
0.3	16.21	3.36	91.58	8.42	2-10
0.075	10.22	2.12	93.70	6.30	0-8

Sieve Size in mm	Trail 2				Specified Limits as per MORTH specification table 500-04 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
26.5	0	0	0.00	100	100
19	30.25	6.28	6.28	93.72	90-100
13.2	81.22	16.87	23.15	76.85	56-88
4.75	255.6	53.08	76.23	23.77	16-36
2.36	50.22	10.43	86.66	13.34	4-19
0.3	25.65	5.33	91.99	8.01	2-10
0.075	5.39	1.12	93.11	6.89	0-8

*Information is furnished by the Customer/Representative.

Note:

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Civil-tech Consultants & Engineers
#23/14, 7th Cross 3rd Stage 4th Block,
Shakthi Ganapathinagar,
Basaveshwaranagar, Bangalore-560 079.

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

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Job No: CTCE/BBMP/KRIDL/W.No.13/BM/Agg.G/2017-18

12.4.2018

TEST REPORT ON GRADATION OF AGGREGATES

* Customer	:	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
* Agency	:	**Technical Manager (West),** KRIDL, Bangalore.
* Name of work	:	Improvements of asphalting at Ashwathkatte surrounding area in Mallasandra Ward No.13, Shettyhalli Sub Division, BBMP, Bangalore.
* Reference	:	BBMP/EE/DD/WO/220/2017-18 Dated: 07.02.2018
* Sample ID	:	Hot Mix Plant, Bangalore
Technical Reference	:	IS : 2386(Part -1)-1963 (RA-2011)
* Type of Mix	:	Bituminous Macadam
Date of Testing	:	12.4.2018

Total Weight of Sample: **5250** gm

Sieve Size, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	Grade-II As per MORTH	Remarks
26.5	0	0	0	100	100	Gradation satisfies Grade II MORTH Table 500-4 specification
19	385	7.33	7.33	92.67	90-100	
13.2	1520	28.95	36.29	63.71	56-88	
4.75	1685	32.10	68.38	31.62	16-36	
2.36	945	18.00	86.38	13.62	4-19	
0.3	250	4.76	91.14	8.86	2-10	
0.075	130	2.48	93.62	6.38	0-8	

Total Weight of Sample: **5350** gm

Sieve Size, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	Grade-II As per MORTH	Remarks
26.5	0	0	0	100	100	Gradation satisfies Grade II MORTH Table 500-4 specification
19	310	5.79	5.79	94.21	90-100	
13.2	1520	28.41	34.21	65.79	56-88	
4.75	1640	30.65	64.86	35.14	16-36	
2.36	930	17.38	82.24	17.76	4-19	
0.3	525	9.81	92.06	7.94	2-10	
0.075	130	2.43	94.49	5.51	0-8	

* Information is furnished by the Customer/Representative

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#23/14, 7th Cross 3rd Stage 4th Block,
Shakthi Ganapathinagar,
Basaveshwaranagar, Bangalore 560 079.

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

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T-2377

Job No.: CTCE/BBMP/KRIDL/W.No.13/CSR-03/585g/QB(BC)/2018-19 11.04.2018

TEST REPORT ON DETERMINATION OF BITUMEN CHARACTERISTICS

* Customer	:	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
* Agency	:	**Technical Manager (West),** KRIDL, Bangalore.
* Name of work	:	Improvements of asphalting at Ashwathkatte surrounding area in Mallasandra Ward No.13, Shettyhalli Sub Division, BBMP, Bangalore.
* Reference	:	BBMP/EE/DD/WO/220/2017-18 Dated: 07.02.2018
* Sample ID	:	Bitumen
Source/ Location	:	Hot Mix Plant, Bangalore.
Sample Received on	:	09.04.2018
Period of Testing	:	09.04.2018 to 11.04.2018

The results of the tests conducted on the bitumen sample are as follows:

Sl. No	Description	Test Method as per IS	Test Result	Requirement as per IS:73:2013
1	Penetration at 25 °C, 1/10 mm	IS :1203 -1978 (RA-2014)	66	60 to 70
2	Softening point, °C	IS :1205 -1978 (RA-2014)	46	Min. 45
3	Ductility at 27°C, cm	IS :1208 -1978 (RA-2014)	100 >	Min. 50
4	Flash Point, °C	IS :1209 -1978 (RA-2014)	296	Min. 220

Information is furnished by the Customer/Representative

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VIDYARANI P.K.
Technical Manager

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

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Job No.: CTCE/BBMP/KRIDL/W.No.13/BC/AIV/2017-18 11.04.2018

TEST REPORT ON IMPACT VALUE OF AGGREGATES

* Customer	:	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
* Agency	:	**Technical Manager (West),** KRIDL, Bangalore.
* Name of Work	:	Improvements of asphalting at Ashwathkatte surrounding area in Mallasandra Ward No.13, Shettyhalli Sub Division, BBMP, Bangalore.
* Reference	:	BBMP/EE/DD/WO/220/2017-18 Dated: 07.02.2018
* Sample ID	:	Hot mix plant, Bangalore.
* Type of Mix	:	Bituminous Concrete
Technical Reference	:	IS: 2386 (Part- 4)-1963 (RA-2011)
Date of Testing	:	11.04.2018

Sl No.	Details	Trial No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	382	383	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	81	82	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	301	301	
4	Aggregate Impact value = percent fines 100* (W2/W1) percent	21.20	21.41	**21.31**

*Information is furnished by the Customer/Representative.

Comments:

⇒ Maximum allowable Aggregate Impact value for Bituminous Concrete is 24%

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#23/14, 7th Cross 3rd Stage 4th Block,
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Basaveshwaranagar, Bangalore-560 079.

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Job No.: CTCE/BBMP/KRIDL/W.No.13/BC/Shape.T/2017-18 11.04.2018

TEST REPORT ON FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

* Customer	:	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
* Agency	:	**Technical Manager (West),** KRIDL, Bangalore.
* Name of Work	:	Improvements of asphalting at Ashwathkatte surrounding area in Mallasandra Ward No.13, Shettyhalli Sub Division, BBMP, Bangalore.
* Reference	:	BBMP/EE/DD/WO/220/2017-18 Dated: 07.02.2018
* Sample ID	:	Hot mix plant, Bangalore
Technical Reference	:	IS : 2386(Part -1)-1963 (RA-2011)
* Type of Mix	:	Bituminous Concrete
Date of Testing	:	11.04.2018

Sl.No.	Description	Result
1	Flakiness Index	11.28%
2	Elongation Index	13.52%
3	Combined Flakiness & Elongation Index	24.80%

*Information is furnished by the Customer/Representative.

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Comments:

→ Maximum allowable Flakiness & Elongation Index for Bituminous Concrete is 30%

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#23/14, 7th Cross 3rd Stage 4th Block,
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Basaveshwaranagar, Bangalore-560 079.

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